

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 7,479,746 B2
APPLICATION NO. : 10/806635
DATED : January 20, 2009
INVENTOR(S) : Gregory I. Rozman

Page 1 of 3

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

The Title Page, showing an illustrative figure, should be deleted and substitute therefor the attached Title Page.

Delete drawing sheet and substitute therefor the drawing sheet, consisting of figs. 1 and 2 as shown on the attached page.

IN THE CLAIMS:

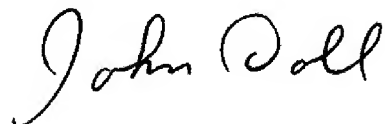
Claim 6, Column 4, line 20: "inverter" should read as --converter--.

Claim 9, Column 4, line 35: "toad" should read as --load--.

Claim 19, Column 6, line 3: "convened" should read as --converted--.

Signed and Sealed this

Fourth Day of August, 2009

A handwritten signature in cursive script that reads "John Doll".

JOHN DOLL
Acting Director of the United States Patent and Trademark Office

(12) **United States Patent**
Rozman et al.

(10) **Patent No.:** **US 7,479,746 B2**
(45) Date of Patent: **Jan. 20, 2009**

(54) **POWER CONVERTER FOR AN ELECTRIC
ENGINE START SYSTEM**

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(*) **Notice:** Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 685 days.

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(51) **Int. Cl.**
H02P 1/54 (2006.01)
H02P 5/00 (2006.01)
H02P 5/46 (2006.01)

(52) **U.S. Cl.** **318/98; 318/101; 318/453;**
318/623

(58) **Field of Classification Search** **318/98;**
318/101, 453, 623
See application file for complete search history.

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Primary Examiner—Walter Benson

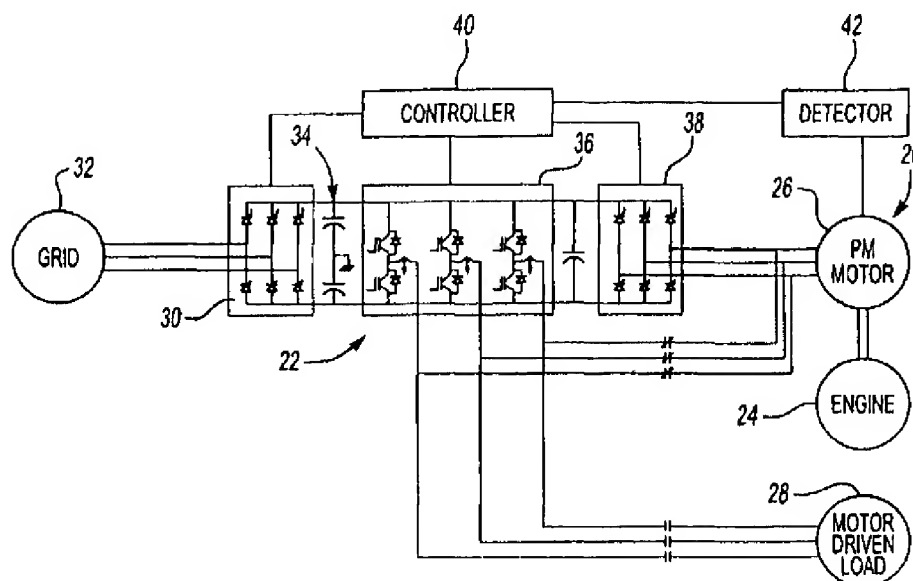
Assistant Examiner—Erick Glass

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(57) **ABSTRACT**

An electric engine starting system includes a permanent magnet motor that is used to start the engine and then to generate power for powering a load while the engine is running. A disclosed system includes a first phase controlled rectifier in series with a power converter and a second phase controlled rectifier. During an engine starting operation, the first phase controlled rectifier is switched to couple the permanent magnet motor to a power source for starting the engine. Once the engine is running, the first phase controlled rectifier is switched off and the second phase controlled rectifier is switched on. The second phase control rectifier converts variable AC power from the motor into DC power. The power converter converts the DC power into an appropriate power for driving the load. One disclosed example includes a filter between the power converter and the load to ensure that the load receives a selected quality of power.

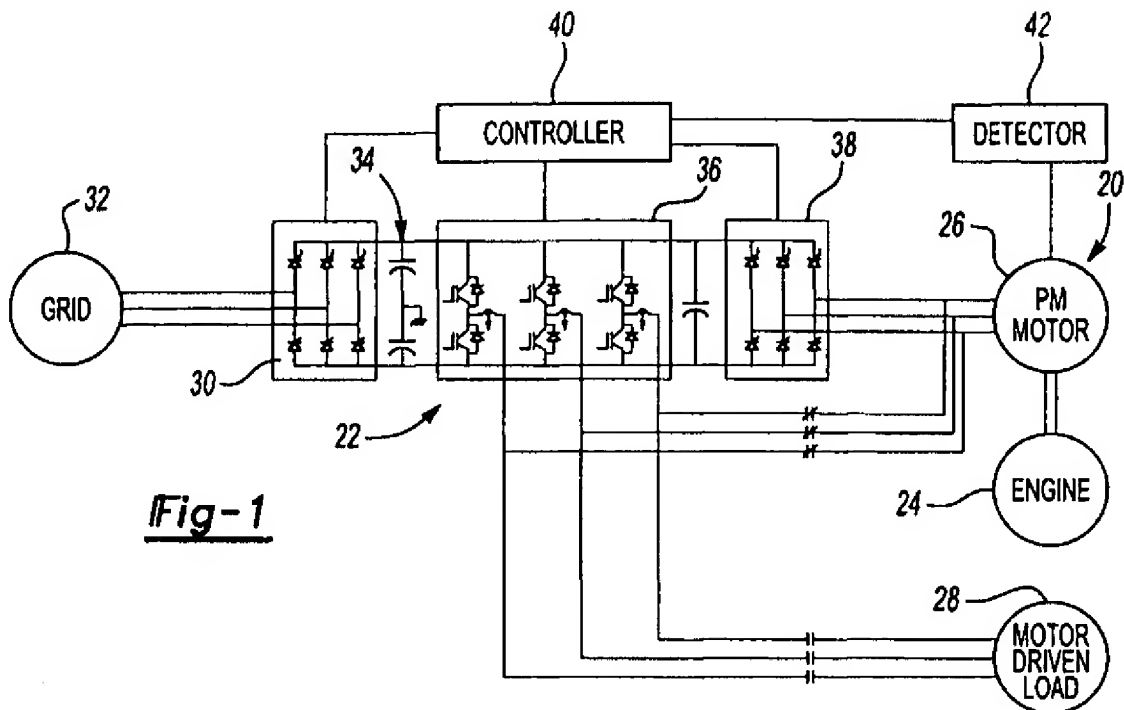
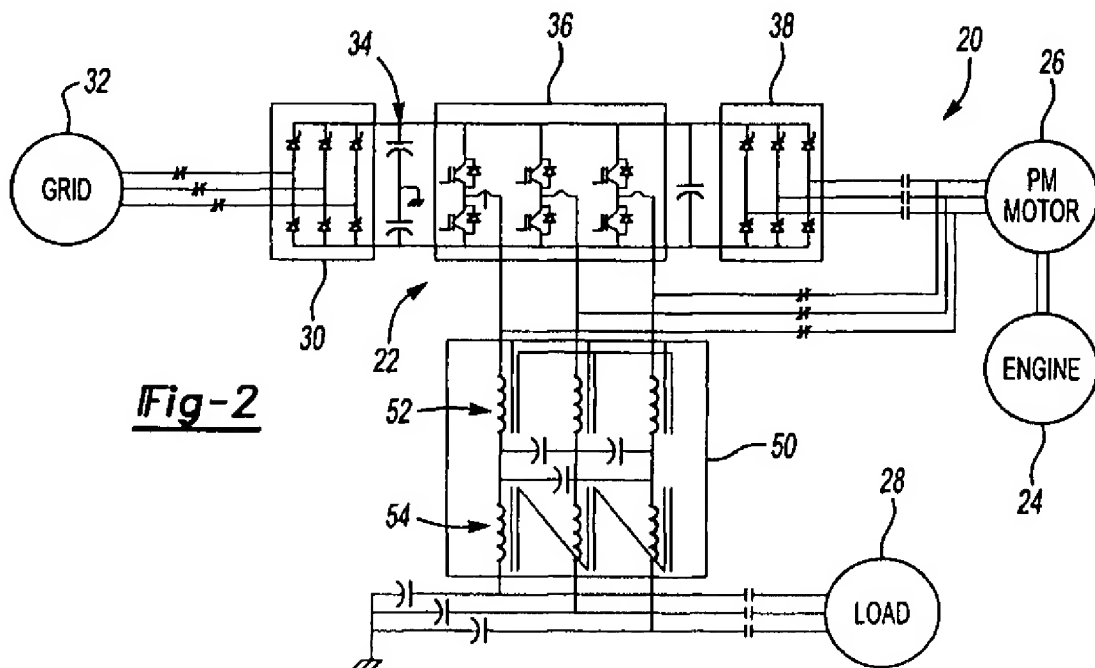
20 Claims, 1 Drawing Sheet



U.S. Patent

Jan. 20, 2009

7,479,746 B2

Fig-1Fig-2